

less colored, these and the petioles densely stellate-puberulent; stipules longer (3 to 6 mm. long); leaf blades thinner, lighter green, not shiny, at least twice as large, distinctly 3-lobed, usually 7-veined from the base, deeply cordate at base with the sinus usually narrow and often closed above, acutish to short-acuminate at apex; peduncle much shorter (5 to 12 mm. long); involucre more persistent (usually until anthesis), the bractlets much larger (10 to 25 mm. long and 7 to 15 mm. wide), ovate or oblong-ovate, entire, denticulate or often rather deeply few-dentate toward apex; calyx merely undulate or denticulate on the margin and sparsely gland-dotted; capsule broader (often nearly spherical in shape), with inner margins of valves copiously long-ciliate; seeds plumper, the hairs longer, silvery-gray in color.<sup>5</sup>

Another interesting difference is in the oil of the walls of the unripe capsules. This is bright orange in both species, but has merely a peppery odor in *G. harknessii* (as in the cultivated Egyptian cottons), whereas in *G. armourianum* the oil is fragrant, with an odor suggesting that of rose geranium (*Pelargonium graveolens*).

*G. armourianum* is known only from San Marcos Island, where, as indicated on the labels of Johnston's specimens, it is "very common in draws, on talus and in sandy bottoms." When the writer saw the plants there on April 6, 1931, they were flowering profusely and had many unripe capsules, although there had been no heavy rainfall at that locality for more than 18 months. This species is, therefore, pronouncedly xerophytic like *G. harknessii*, which occurs in similar habitats.

The type collection of *G. harknessii* was made by T. S. Brandegee in 1889 on Santa Margarita Island, off the west coast of Lower California, at approximately latitude 24° 30' N. This species has been collected also at several localities on the east coast of the peninsula and neighboring islands, from somewhat north to somewhat south of latitude 26°. Plants grown in California from seeds collected on Carmen Island by Collins, Kearney, and Kempton, are very similar to the type specimen in the herbarium of the University of California.

<sup>5</sup> As the two genera are defined by Bentham and Hooker (Genera Plantarum), by Schumann (Engler und Prantl. Natürl. Pflanzenfam.), and by Ulbrich (in Bot. Jahrb. 50 (Suppl.): 360, 1914), *armourianum* belongs to *Cienfugosia* rather than to *Gossypium*, because of its caducous involucre of small, narrow bractlets. But in *G. harknessii* the bractlets are much larger and less caducous and in *G. davidsonii* Kellogg they are both large and persistent. The three species are so evidently related to one another and are so like *Gossypium* in other characters that reference of any of them to *Cienfugosia* would be an unsatisfactory solution.

ZOOLOGY.—*Descriptions of five new species of seahorses.*<sup>1</sup> ISAAC GINSBURG, U. S. Bureau of Fisheries. (Communicated by WALDO L. SCHMITT.)

An attempt to elaborate satisfactory characters by which to distin-

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guish properly the American species of *Hippocampus* and their close relatives on the eastern Atlantic coast led to the surprising discovery that the following five species have remained unnamed to this late date. In view of the chaotic state in which the taxonomy of *Hippocampus* was found to be during the course of this study, a revisionary account of the species inhabiting these waters has been prepared and will be published at a later date.

#### ***Hippocampus europaeus*, new species**

*Description of type specimen:* Brood pouch well developed. Trunk segments 11. Caudal segments 39. Dorsal rays 18. Pectoral rays 14. Coronet of medium height, rather broad. Tubercles of medium development, not markedly obtuse. Length 95 mm.; depth 15.8; head 19.7; snout 6.4; eye 4.2; postorbital part of head 10.1; trunk 29.7; and tail 65.2 per cent of length.

*Holotype:* U.S.N.M. Cat. No. 28544; La Rochelle, France.

*Discussion:* It seems strange, indeed, that what appears to be a common seahorse on the Atlantic coast of France and possibly other parts of Europe, should prove to be a new species. However, a study of the European material available to me, although not extensive nor in the best of condition, admits no other interpretation. The seahorses from the Atlantic coast of Europe were heretofore identified with either one or the other of the two common Mediterranean species. As compared with those species, it differs from *H. guttulatus* Cuvier in having a markedly shorter snout, there being no intergradation in the material examined, and in having less numerous dorsal and pectoral rays, these latter characters intergrading to some extent. In the short snout it agrees with *H. hippocampus* Linnaeus (most generally designated as *H. brevisrostris* by authors), but differs from the latter in having a more slender trunk, better developed tubercles, and, on the average, more numerous caudal segments and dorsal rays, and to a lesser extent also more pectoral rays. In connection with this study, 9 specimens of *europaeus*, 4 of *hippocampus*, and 24 of *guttulatus* have been examined. Study of a larger series might possibly show a greater degree of intergradation and a subspecific status for *europaeus* might be thought desirable, but there is no doubt that it is recognizably distinct from either of the two common Mediterranean species.

#### ***Hippocampus reidi*, new species**

*Description of type specimen:* The brood pouch well developed, extending to fifth caudal segment. Trunk segments 11. Caudal segments 37. Dorsal rays 17. Pectoral rays 16. Tubercles obsolescent. Coronet markedly low and blunt. Trunk notably slender. Length 121 mm.; depth 15.2; head 22.6; snout 11.2; eye 3.6; postorbital 9.8; trunk 33.4; and tail 62.2 per cent of length. Covered densely with small brown spots against a lighter background; ground color profusely sprinkled with minute, almost microscopic, white dots.

*Holotype*: U.S.N.M. Cat. No. 86590; St. George, Grenada, British West Indies; W. O'Brien Donovan. I have also studied specimens of this species from Porto Bello, Panama; Jamaica, West Indies; and Port-au-Prince, Haiti.

*Discussion*: This species is evidently close to *H. punctulatus* and may be distinguished from the latter by its markedly slender trunk, when specimens of like size and the same sex are compared, the comparatively lower coronet, the absence of tubercles on the upper margin of the trunk, and the markedly different color pattern. In its obsolescent tubercles it nearly agrees with *H. hippocampus* from the Mediterranean, differing from the latter in its slender body, longer snout and the pectoral rays being more numerous on the average.

The species is named for Mr. Earl D. Reid, Aid in the Division of Fishes of the U. S. National Museum.

#### **Hippocampus obtusus**, new species

*Description of type specimen*: Brood pouch just beginning to develop, in form of elliptical fold of skin on anterior 4 caudal segments. Trunk segments 11. Caudal segments 35. Dorsal rays 17. Pectoral rays 16. Every third spine on trunk and every third or fourth on anterior part of tail having a peculiar and characteristic form, very stout and very obtuse, reduced to stout stumps. Coronet of medium height. Length 70 mm.; depth 11.8; head 24.5; snout 10.7; eye 4.4; postorbital 10.8; trunk 35.2; and tail 60.9 per cent of length.

*Holotype*: U.S.N.M. Cat. No. 84527; secured by the *Albatross* from off Cape Hatteras, North Carolina; June 5, 1885.

*Discussion*: Although this specimen was taken within the geographic range of *hudsonius* and the counts of its meristic characters also fall within the range of variation of that species, it evidently represents a distinct species, separable chiefly by the peculiar structure of the tubercles. The trunk in the present species is conspicuously more slender, even more so than the extreme variants of the specimens of *hudsonius* which have been measured. The specimen described has been compared with over 70 specimens of *hudsonius*.

#### **Hippocampus hildebrandi**, new species

*Description of type specimen*: No rudiment of a brood pouch, probably a female. Trunk segments 11. Caudal segments 39. Dorsal rays 21. Pectoral rays 17. Every third or fourth spine on upper ridge of trunk and anterior part of tail conspicuous as a stout but short and stumpy projection, the appearance very characteristic. Coronet of medium height. Length 68 mm.; depth 13.7; head 24.4; snout 10.2; eye 4.4; postorbital 10.6; trunk 30.1; and tail 65.4 per cent of length. No definite color pattern discernible.

*Holotype*: U.S.N.M. Cat. No. 82063; Chame Point, Pacific coast of Panama; Robert Tweedlie.

*Discussion*: This species is the Pacific coast counterpart of *H. obtusus*, differing from the latter in the more numerous dorsal rays and caudal segments.

I take pleasure in naming this species after Dr. Samuel F. Hildebrand, Ichthyologist, of the U. S. Bureau of Fisheries.

**Hippocampus regulus**, new species

*Description of type specimen:* A male with the brood pouch fully developed. Length 30.5 mm.; depth of trunk 18.4; head 22.6; snout 6.9; eye 5.9; postorbital part of head 12.1; length of trunk 33.8; and tail 62.3 per cent of length. Dorsal rays 11. Pectoral rays 11. Trunk segments 10. Caudal segments 30. Coronet conspicuously high. Tubercles of medium development. Color dark, faintly shaded with lighter; no definite color pattern.

*Holotype:* U.S.N.M. Cat. No. 92950; Harbor Island, Texas; May, 1927; J. C. Pearson. Specimens studied also from Cat Island, Miss., Hog Island, Texas; Champoton, Campeche, Mexico (Zoological Museum, University of Michigan).

*Discussion:* This species differs from *H. zosterae* Jordan and Gilbert chiefly in having fewer dorsal rays and caudal segments, although there is more or less intergradation in these characters.

ZOOLOGY.—*Some Greenland hydroids.*<sup>1</sup> C. McLEAN FRASER, University of British Columbia. (Communicated by WALDO L. SCHMITT.)

The small collection of hydroids obtained by Captain R. A. Bartlett in the course of his expeditions to the coasts of Greenland and Baffin Land, 1925–32, and entrusted to me for report through Dr. Waldo L. Schmitt of the United States National Museum, has proved to be of considerable interest.

There are four lots in the collection. From the east coast of Greenland, some hydroid material was obtained in Clavering Fiord, near Clavering Island (10–35 fathoms), in Lat. 74° 20' N., Long. 21° W., on August 2, 1930. From west of Greenland, the largest lot was obtained off Cape Alexander at the entrance to Smith Sound, in approximately Lat. 78° 15' N., Long. 75° W., on August 26, 1932. Another lot was obtained 60 or 70 miles farther south, 5 miles south of Cape Chalon (Prudhoe Land), on July 27, 1932. Finally, a few specimens were obtained from the southern corner of Fox Basin (34–37 fathoms), in Lat. 66° 46' N., Long. 79° 15' W., on August 13, 1929. As Fox Basin is separated from the Greenland waters by Baffin Land, these are not strictly Greenland hydroids, but as there were only two species, both of which have been obtained from Greenland waters, they are included here.

<sup>1</sup> Received September 5, 1933.